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## COMPLETE SPECIFICATION

### Improvements in or relating to Goods Vehicle Bodies

We, ASSOCIATED COACHBUILDERS LIMITED, of Southwick, Sunderland, in the County of Durham, England, a British company, and JOHN EDWARD ROSCOE, of Front Street, Wheatley Hill, in the County of Durham, England, a British subject, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to goods vehicle bodies.

In the transportation of certain goods it is essential that they be kept under cover in an efficient manner to prevent damage from the weather, and this cannot always be ensured by the use of loose coverings such as tarpaulins. An obvious way to effect this is to provide a weather-proof permanent cover on the vehicle body. However, this has the drawback that in the case of heavy equipment requiring cranes for lifting, such goods have to be manoeuvred before they can be brought into a lifting position, which in the case of a covered van must of necessity be virtually at the rear end of the van. This is obviously inconvenient.

The object of the invention is to provide a van body having a permanent weather-proof cover which will enable the handling of heavy crates of goods to be carried out by means of cranes with the minimum of inconvenience and manoeuvring while at the same time securing the maximum cover and protection from weather for the goods.

It has been proposed to arrange a tilt or like cover of a vehicle to slide on rollers arranged on the roof of the drivers cabin so that the whole or portion of the vehicle floor could be exposed, the said cover when slid into its rearmost position to cover the vehicle floor being supported at its lower edge by rollers on the upper edges of the side members when these are fixed, or on the upturned end portions of

cross irons when the sides are drop-down sides.

According to the invention, the van body is covered with a permanent or stationary covering over the goods carrying portion which is cut away at its rear portion, the resulting open portion being covered by a rigid horizontally slidable cover portion which is adapted to telescope relatively to the stationary portion. With this arrangement to load or unload the goods the slidable cover portion is first telescoped relatively to the stationary cover portion; then the rear of the body is loaded, after which the load is pushed under the stationary cover, and the remainder of the goods again loaded on the rear of the body; while for unloading the rear portion is first unloaded, the front portion of the goods is drawn forward, and then unloaded; but during transit the sliding cover portion is drawn out to cover the rear portion of the goods.

The invention will now be described by way of example with reference to the accompanying drawings which show the body of a motor vehicle van adapted for handling heavy crates of goods such as electrical equipment. Generally the length of the sides of such crates is 11' 6", and the vehicle body is designed to carry eight of such crates, four of which are carried in the front portion of the van, and four in the rear.

In the said drawings:—

Fig. 1 is an outside elevation.

Fig. 2 is a rear end view of Fig. 1.

Fig. 3 is a cross section of Fig. 1.

Fig. 4 is a detail section to an enlarged scale on the line IV—IV of Fig. 2.

Fig. 5 is a fragmentary view to an enlarged scale of part of Fig. 3.

Figs. 6 to 8 are semi-diagrammatic views to a reduced scale showing the operation of the invention.

Referring more particularly to the drawings 1 is the chassis frame. A is the stationary cover which comprises at its front portion a series of vertical channel

sections or roof bends 2 secured to the chassis frame to which covering material is secured. The rear portion of the cover A is cut away so that the sides only are left, presenting an outline of a substantially semi-parabolic curve tailing off toward the rear end, this portion being supported by vertical channel bars 3.

The supports 2, 3 have on the inside near their upper and lower ends horizontal tracks 4 of the well known near closed channel or box section, in which are arranged rollers 5 mounted on the ends of short spindles 6 projecting into the box section through the space left between the turned in edges of the channel section flanges. The spindles 6 are rigidly mounted on the vertical frame members or roof bends 7 of an open ended cover portion B of similar shape to the stationary cover but of smaller dimensions so that the said cover portion may telescope into the latter.

For moving the cover portion B an endless cable 8 is secured to a plate 9 which in its turn is secured to the cover B, the cable 8 passing round an adjustable sheave 10 mounted on one of the roof bends 2, a pair of sheaves 11, 12 at the rear end of the cover frame, and a winch 13 vertically beneath the sheaves 11, 12. An extension 14 of the winch shaft having its end shaped to receive a handle is provided for operating the cover portion B.

To ensure against the ingress of weather the front roof bend of the slidable cover B has on its outside an angle iron 15 having secured thereto a sponge rubber strip 16 against which is adapted to abut the lower portion of a vertical section strip 17 of aluminium alloy secured to the front side of the rear roof bend 2 of the main body. Along the rear side of the rear roof bend 2 there is secured a vertical section flat rubber strip 18 which is of such a depth that it presses resiliently at an angle against the cover of the sliding cover portion B. Hence an effective double seal is provided between the stationary and slidable cover portions.

The floor of the body is provided with longitudinal channel sections 19 running underneath the lower portions of the sliding cover portion to act as drains to carry away moisture which may run down the sides of the said cover portion, holes 20 being drilled in the web of the channel for drainage.

The portion of the floor on which the goods are to rest preferably comprises corrugated sections 21 running longitudinally along the body to facilitate moving of the crates. However, for facilitating the rapid movement of the one half of the goods to the rear after

they have been deposited, to make room for receiving the second half, longitudinal tracks 22 are arranged on the floor and in these rollers 23 of a carriage 24 of about half the floor length are adapted to travel.

For moving the carriage 24, there is a winch 25 arranged at the rear of the vehicle; and from this winch a cable 26 is carried over sheaves 27 and 28, the end of the cable being adapted to be coupled to the front or rear ends of the carriage according to whether the latter is to be moved forwards or backwards. For forward movement the cable 26 is carried around a sheave 29 at the front of the vehicle and then carried back to the carriage. The winch 25 carries an extension of its shaft for receiving a winding handle.

The rear end of the sliding cover portion is fitted with a roller shutter 30 which is adapted to roll into its roof when in the open position in which it clears the load in whatever position it is slid.

Figs. 6 to 7 show diagrammatically the invention in operation. When the van is to be loaded, the rear portion B of the roof is slid into the front portion as shown in Fig. 6. The carriage 24 is moved to the rear of the van and loading is proceeded with. When the first four crates have been deposited upon the carriage 24 the latter is moved to the front by operating the winch 25 with the cable 26 coupled to the front of the carriage, and the next four crates deposited as shown in Fig. 7. The sliding portion B is then pulled out from the stationary portion A by operating the winch 13 until the front of the portion B abuts against the rear roof bend of the stationary cover A, as shown in Fig. 8, and the sponge rubber strip 16 contacts with the plate 17 as above described. The roller shutter 30 is then closed so that the goods are entirely closed against ingress of weather. When unloading is to be effected the roller shutter 30 is opened, the sliding portion B is pushed into the stationary portion A, and the four rear crates are then unloaded. The carriage 24 carrying the four front crates is then brought to the rear and these crates are unloaded.

The invention thus provides a simple and convenient form of covered van which enables loading and unloading of heavy loads to be carried out expeditiously and efficiently and at the same time ensures the goods being maintained in good condition against weather.

What we claim is:—

1. A goods vehicle body comprising a permanent or stationary covering over the goods carrying portion which is cut away

at its rear portion, the resulting open portion being covered by a slidably horizontally slidable cover portion which is adapted to telescope relatively to the stationary portion.

2. A vehicle body according to Claim 1 wherein the stationary cover portion extends rearwards to the end of the vehicle, and on the inside thereof there are horizontal runners whereby the movable cover portion is slidably mounted on the stationary portion.

3. A vehicle body according to Claim 2, wherein there are arranged in the runners rollers mounted on the ends of short spindles projecting from the movable cover portion.

4. A vehicle body according to any of the preceding Claims, wherein for moving the movable cover portion there is secured thereto an endless cable which passes round a sheave mounted on the front of the stationary cover portion, and round a winch mounted on the rear of the stationary portion or other stationary position.

5. A vehicle body according to Claim 4, wherein the sheave is adjustable.

6. A vehicle body according to any of the preceding Claims wherein to ensure against the ingress of weather the front support or roof bend of the slidable cover has secured to it on the outside a resilient strip against which is adapted to abut an abutment on the front side of the rear roof bend of the stationary cover portion, while along the rear side of the rear roof bend of the stationary cover portion there is secured a vertical section resilient strip which is of such a depth that it presses resiliently at an angle against the cover of the sliding cover portion.

7. A vehicle body according to any of the preceding Claims wherein the floor of the body is provided with longitudinal channel sections running underneath the

lower portions of the sliding portion to act as drains to carry away moisture which may run down the sides of the said cover portion, holes being drilled in the web of the channel for drainage.

8. A vehicle body according to any of the preceding Claims wherein for facilitating the rapid movement of the one half of the goods to the rear after they have been deposited, to make room for receiving the second half, longitudinal tracks are arranged on the floor and in these rollers of a carriage of about half the floor length are adapted to travel.

9. A vehicle body according to Claim 8, wherein for moving the carriage, there is arranged at the rear of the vehicle a winch the end of whose cable is adapted to be coupled to the front or rear ends of the carriage according to whether the latter is to be moved forwards or backwards, a sheave at the front of the vehicle being provided for guiding the cable when it is to be coupled to the front of the vehicle.

10. A vehicle body according any of the preceding Claims wherein the rear end of the sliding cover portion is fitted with a roller shutter which is adapted to roll into its roof when in the open position in which it clears the load in whatever position it is slid.

11. A vehicle body having its parts arranged, combined and adapted to operate substantially as described with reference to and as illustrated in the accompanying drawings.

For the Applicants:

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## PROVISIONAL SPECIFICATION

### Improvements in or relating to Goods Vehicle Bodies

We, ASSOCIATED COACHBUILDERS LIMITED, of Southwick, Sunderland, in the County of Durham, England, a British company and JOHN EDWARD ROSCOE, of Front Street, Wheatley Hill, in the County of Durham, England, a British subject, do hereby declare the nature of this invention to be as follows:—

This invention relates to vehicle bodies.

In the transportation of certain goods it

is essential that they be kept under cover in an efficient manner to prevent damage from the weather, and this cannot always be ensured by the use of loose coverings such as tarpaulins. An obvious way to effect this is to provide a weather-proof permanent cover on the vehicle body. However, this has the drawback that in the case of heavy equipment requiring cranes for lifting, such goods have to be manoeuvred before they can be brought into a lifting position, which in the case

of a covered van must of necessity be virtually at the rear end of the van. This is obviously inconvenient.

The object of the invention is to provide a van body having a permanent weather-proof cover which will enable the handling of heavy crates of goods to be carried out by means of cranes with the minimum of inconvenience and manœuvring while at the same time securing the maximum cover and protection from weather for the goods.

According to the invention, the van body is covered with a permanent or stationary covering which is cut away at its rear portion, the resulting open portion being covered by a slidable cover portion which is adapted to telescope relatively to the stationary portion; so that to load or unload the goods the slidable cover portion is first telescoped relatively to the stationary cover portion, and for loading, say the rear of the body is loaded, after which the load is pushed forward under the stationary cover, and the remainder of the goods loaded; while for unloading when the rear portion has been unloaded, the front portion of the goods is drawn forward, and then unloaded; but during transit the sliding cover portion is drawn out to cover the rear portion of the goods.

The invention will now be described by way of example with reference to the body of motor vehicle van adapted for handling heavy crates of goods such as electrical equipment. Generally the length of the sides of such crates is 11' 6", and the vehicle body is designed to carry eight of such crates, four of which are carried in the front portion of the van, and four in the rear.

According to this arrangement the stationary cover comprises sides and a roof, the sides extending upwards for the full height of the cover and merge into the usual slightly curved roof, but the rear portion of the cover is cut away so that the sides only are left presenting an outline of a substantially semi-parabolic curve trailing off toward the rear end.

The sides comprise vertical supporting members having on the inside near their upper and lower ends horizontal sliding tracks of the well known nearly closed channel or box section, in which are arranged rollers mounted on the end of short spindles projecting into the box section through the space left between the turned in edges of the channel section flanges. The said spindles are rigidly mounted on the vertical frame members of an open ended cover portion of similar shape to the stationary cover but of

smaller dimensions so that said cover portion may telescope into the latter. The side frame members and their roof portions are known as "roof bends."

To ensure against the ingress of weather the front roof bend of the slidable cover has on its outside an angle iron having secured thereto a sponge rubber strip against which is adapted to abut the lower portion of a vertical section steel strip secured to the front side of the rear roof bend of the main body. Along the rear side of the rear roof bend of the stationary cover there is secured a vertical flat rubber strip which is of such a length that it presses resiliently at an angle against the cover of the sliding cover portion. Hence an effective double seal is provided between the stationary and slidable cover portions.

The floor of the body is provided with longitudinal channel sections running underneath the lower portions of the sliding cover portion to act as drains to carry away moisture which may run down the sides of the said cover portion, holes being drilled in the web of the channel for drainage. The portion of the floor on which the goods are to rest preferably comprises corrugated sections running longitudinally along the body to facilitate moving of the crates. However, for facilitating the rapid movement of the one half of the goods to the rear after they have been deposited, to make room for receiving the second half, a longitudinal track is arranged on the floor and on this track a carriage of about half the floor length is arranged. The rear end of the sliding cover portion is fitted with a roller shutter which is adapted to roll into its roof when in the open position in which it clears the load in whatever position it is slid.

With this construction, when the van is to be loaded, the rear portion of the roof is slid into the front portion, the carriage is moved to the rear of the van and loading is proceeded with. When the first four crates have been deposited upon the carriage the latter is pushed to the front, and the next four crates deposited. The sliding portion of the body is then pulled out from the stationary portion until the front portion abuts against the rear frame member of the stationary cover, and the sponge rubber strip contacts with the rear frame member as above described. The roller shutter is then closed so that the goods are entirely closed against ingress of weather. When unloading is to be effected the roller shutter is opened, the sliding portion is pushed into the stationary portion, and the front rear crates are then unloaded. The carriage

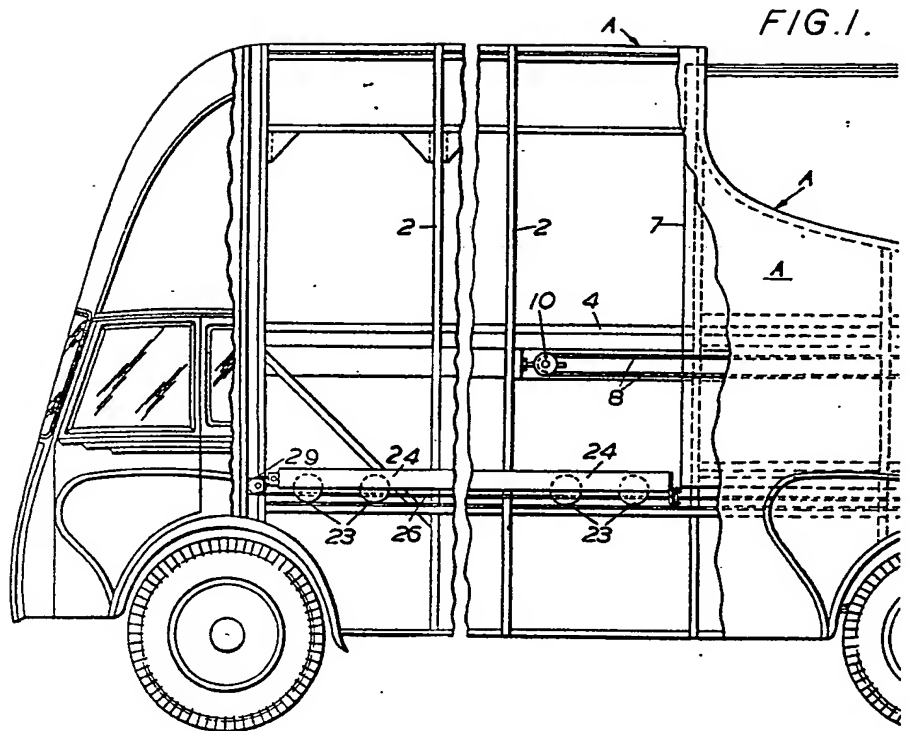
carrying the four front crates is then brought to the rear and these crates are unloaded. The invention thus provides a simple and convenient form of covered 5 van which enables loading and unloading of heavy loads to be carried out expeditiously and efficiently and at the same time ensures the goods being maintained in good condition against weather.

Dated this 10th day of October, 1949.

For the Applicants:—

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Chartered Patent Agent,  
41, Grainger Street,  
Newcastle-on-Tyne, 1.

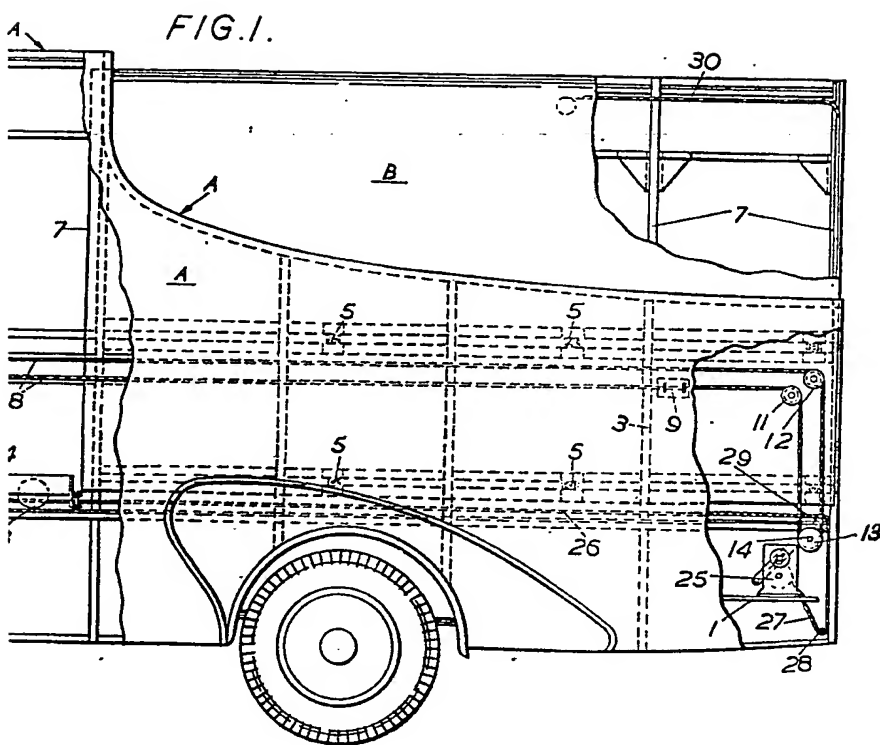
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3 SHEETS

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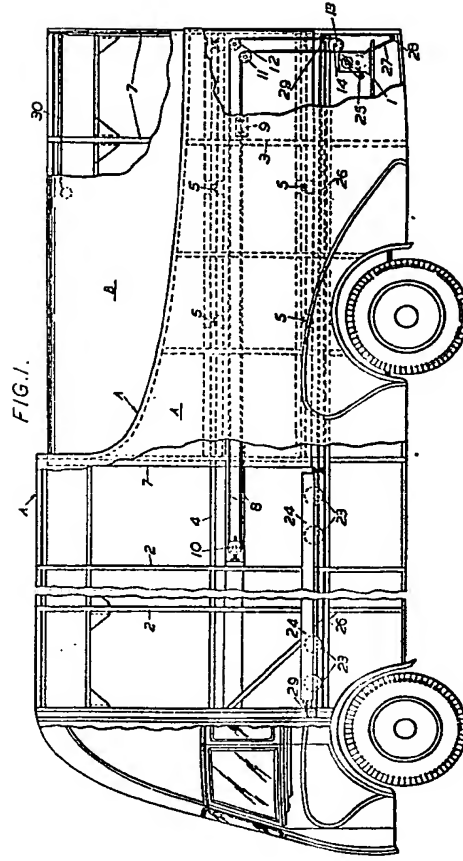




FIG. 2.

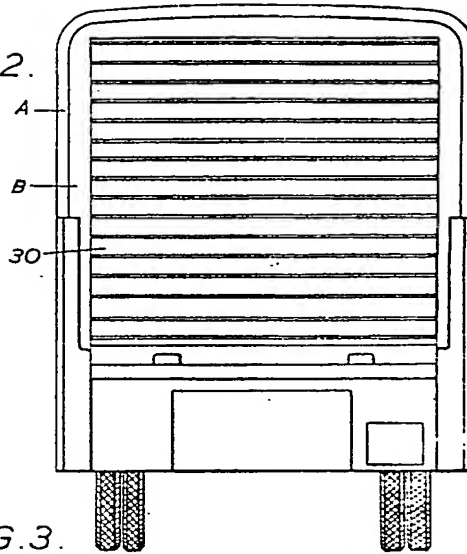
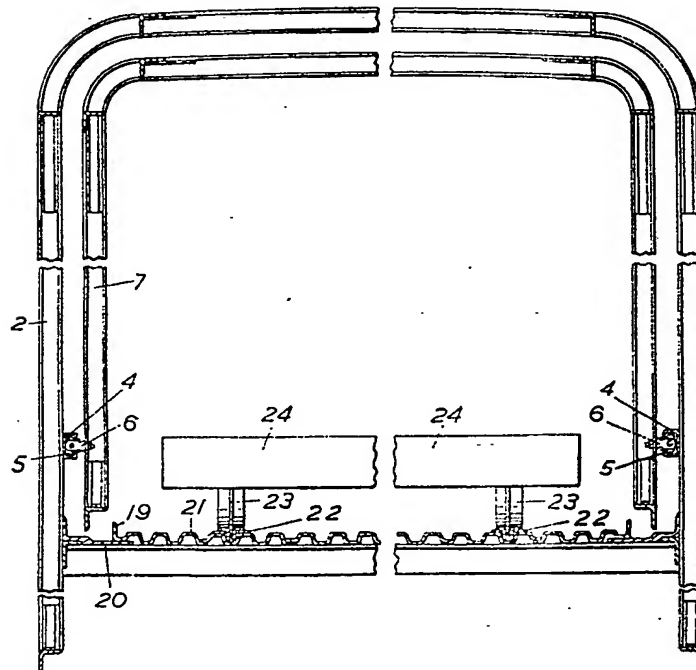


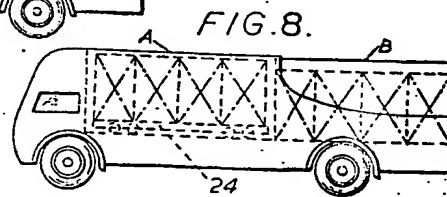
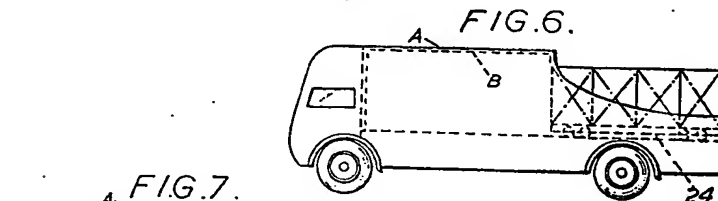
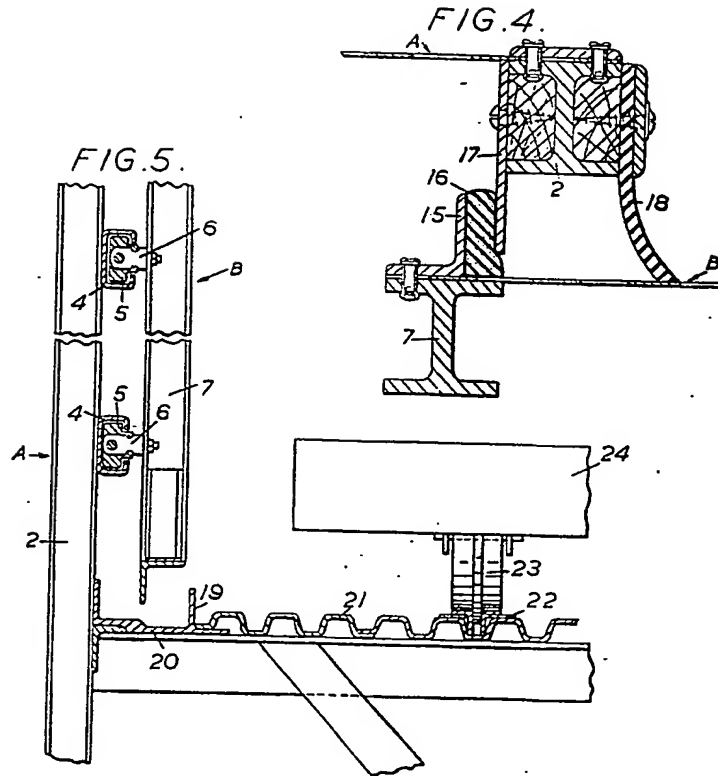
FIG. 3.



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SHEETS 2 & 3



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SHEETS 2 & 3

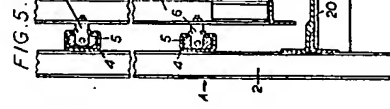
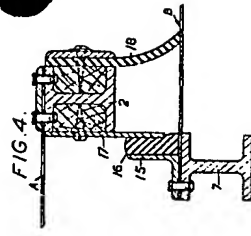
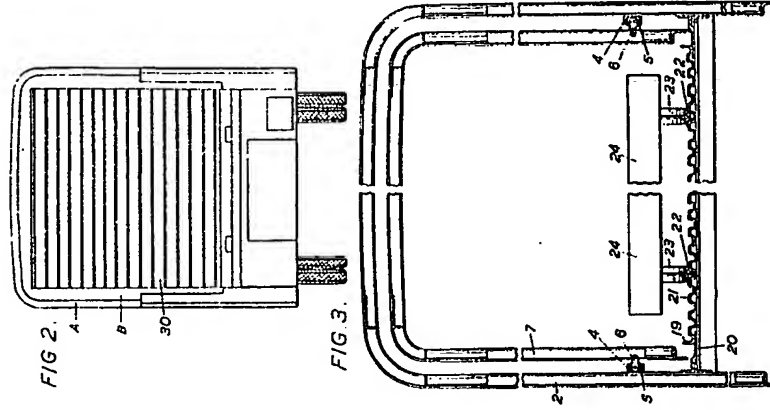
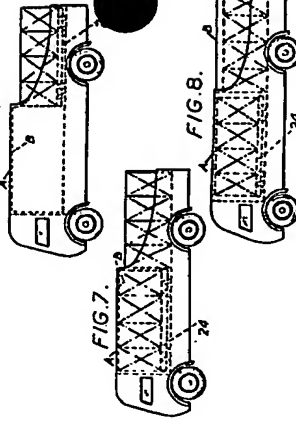


FIG. 6.



Charles A. Rice

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